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EXAMINER

MOORE, IAN N

ART UNIT PAPER NUMBER

2661

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/899,159

Applicant(s)

ABRAMOV ET AL.

Examiner

Ian N. Moore

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/5/02.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Oath/Declaration*

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The word "same" in the city field is required to be updated with an actual city name.

The oath or declaration is defective because:

It does not identify **the city** and either state or foreign country of residence of each inventor. The residence information may be provided on either on an application data sheet or supplemental oath or declaration.

### *Specification*

2. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract line 7 and line 10 discloses "**said**" the form and legal phraseology.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

### *Claim Objections*

3. Claims 1 and 9 are objected to because of the following informalities:

**Claim 1** recites "an electronic network" in lines 6 and 11. For clarity, it is suggested to distinguish whether they are the same or separate networks.

**Claim 9** recites "multiplexer's inputs" in page 23, line 5. For clarity, it is suggested to insert the space between "multiplexer's" and "inputs".

Claim 9 recites “an interactive algorithm” in line 36, “said interactive algorithm” and “said algorithm” in line 37. It is suggested to clarify whether “said algorithm” refers to an interactive algorithm. Applicant probably meant to use “said operator” in accordance with drawings and specification.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye (US006259733B1) in view of Nagishi (US006870861B1).

**Regarding Claim 1**, Kaye discloses a system for statistical-multiplexing of bit stream data (see FIG. 1, statistical multiplexing in the multi-channel encoder 100; abstract, see col. 4, lines 5-7) under control of human operator (see col. 9, lines 50-56; an operator), said system having a statistical distribution of average rates (see FIG. 1, central control for rates; see FIG. 3A, averaging), said system comprising:

a plurality of bit stream encoders arranged in groups (see FIG. 1, encoders 111, 121, ..., and 131), each of said groups having a different bit rate range for compression of content for transmission (see FIG. 1, Compressor 140,150,...,160) over an electronic network (see FIG. 1, an network 100), each encoder having an assigned priority for processing said bit

stream data (see FIG. 3b, step 342 and see FIG. 2; processing with prioritized data rate assigned to each encoder; see col. 7, lines 54-65; see col. 5, lines 10-20);

a control computer (see FIG. 1, Central Control 170) configured to receive as input, the resulting current quality of content relative to output bit-streams of said plurality of encoders (see FIG. 1, Bit rate demand signals  $D_i$  inputs from encoders), and configured to send as output, the calculated desired bit-rates for said plurality of encoders (see FIG. 1, Allocated bit rate singles  $R_i$  outputs to encoders; see col. 4, lines 25-64; see col. 9, lines 50 to col. 10, lines 14; encoding variable bit rates, VBR); and

a multiplexer (see FIG. 1, Mux 180) coupled via an electronic network (see FIG. 1, a network within 100) to receive from said control computer a scanning array (see FIG. 1, Mux control signal 172) for storing the results of monitoring said output bit streams (see col. 4, lines 65 to col. 5, lines 10),

said control computer being programmed to control said plurality of bit stream encoders (see FIG. 3A-B and 5A-B; program/method to control encoders), thereby defining the relative quality of the output of said plurality of encoders (see col. 5, lines 65 to col. 8, lines 5; see col. 8, lines 40 to col. 9, lines 65).

Kaye does not explicitly disclose a plurality of cascaded multiplexers. However, Negishi teaches a plurality of cascaded multiplexers (see FIG. 1, Degree-one Multiplexer 104a-n to degree-two multiplexer 105; or see FIG. 6, Degree-one Multiplexer 2a-2n to degree-two multiplexer 3) coupled communicating with encoders (see FIG. 1, encoders 102a-102n) and communicating with a control computer (see FIG. 6, Controller 6); see col. 1, lines 29-67; see col. 9, lines 5-39. Therefore, it would have been obvious to one having ordinary

skill in the art at the time the invention was made to provide a plurality of cascaded multiplexers, as taught by Negishi in the system of Kaye, so that it would suppress jitter in degree-two multiplexing and in which the degree of freedom of multiplexing of degree-one multiplexers is assured to effect multiplexing; see Negishi col. 6, line 34-65.

**Regarding Claim 2**, Kaye discloses wherein a desired distribution of the average bit stream rates among said plurality of encoders is fixed in alignment with said priorities, as determined by said scanning array of multiplexers (see FIG. 1, Central Control 170; see col. 5, lines 65 to col. 8, lines 5; see col. 8, lines 40 to col. 9, lines 65; distribution of allocated bit rates signals  $R_i$  among encoders is synchronized (i.e. fixed in alignment with priorities) as determined by mux control signal of the central control). Negishi discloses said plurality of cascaded multiplexers as stated above in claim 1. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a plurality of cascaded multiplexers, as taught by Negishi in the system of Kaye, for the same reason as stated above in claim 1.

**Regarding Claim 3**, Kaye discloses wherein said scanning array of said multiplexer is fixed in alignment according to a desired distribution of the average bit stream rates among said plurality of encoders (see FIG. 1, Central Control 170; see col. 5, lines 65 to col. 8, lines 5; see col. 8, lines 40 to col. 9, lines 65; mux control signal of the central control is synchronized (i.e. fixed is fixed in alignment with priorities) according to distribution of allocated bit rates signals  $R_i$  among encoders). Negishi discloses said plurality of cascaded multiplexers as stated above in claim 1. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a plurality of cascaded

multiplexers, as taught by Negishi in the system of Kaye, for the same reason as stated above in claim 1.

**Regarding Claim 4**, Kaye discloses wherein a desired distribution of the average bit stream rates among said plurality of encoders and in relation to said scanning array of said multiplexer are fixed in alignment with each other (see FIG. 1, Central Control 170; see col. 5, lines 65 to col. 8, lines 5; see col. 8, lines 40 to col. 9, lines 65; distribution of allocated bit rates signals  $R_i$  among encoders and mux control signal of the central control are synchronized (i.e. fixed in alignment with each other). Negishi discloses said plurality of cascaded multiplexers as stated above in claim 1. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a plurality of cascaded multiplexers, as taught by Negishi in the system of Kaye, for the same reason as stated above in claim 1.

**Regarding Claim 5**, Kaye discloses wherein a desired distribution of the average bit stream rates among said plurality of encoders is kept for a pre-defined time interval (see col. 5, lines 10-20; see col. 8, lines 40-57; see col. 9, lines 1-12).

**Regarding Claim 6**, Kaye discloses wherein the bit stream rates vary within limits defined by a criterion of alignment of a desired distribution of the average bit stream rates among said plurality of encoders (see col. 8, lines 53-65; see col. 9, lines 1-12; see col. 50, lines 63; see col. 5-26; variable bit rate, VBR with maximum/minimum rates) and in relation to said scanning array of said multiplexer (see FIG. 1, Mux control signal 172; see col. 4, lines 65 to col. 5, lines 10), whereby said limits determine available ranges of bit rates (see col. 9, lines 1-12; see col. 50, lines 63; see col. 5-26; maximum and minimum bit rates).

Negishi discloses said plurality of cascaded multiplexers as stated above in claim 1.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a plurality of cascaded multiplexers, as taught by Negishi in the system of Kaye, for the same reason as stated above in claim 1.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye in view of Negishi as applied to claim 1 above, and further in view of Rao (US005506844).

**Regarding Claim 7**, Kaye discloses wherein each of said plurality of encoders is used for encoding content (see FIG. 1, encoders 111, 121, ..., and 131), and wherein said available variation of bit stream rates for each of said plurality of encoders (see col. 8, lines 53-65; see col. 9, lines 1-12; see col. 50, lines 63; see col. 5-26; variable bit rate, VBR) is defined according to the relative quality of among said plurality of encoders, said relative quality being defined by said assigned priorities (see FIG. 3b, step 342 and see FIG. 2; processing with prioritized data rate assigned to each encoder; see col. 7, lines 54-65; see col. 5, lines 10-20).

Neither Kaye nor Negishi explicitly disclose relative of quality of said content. However, Rao discloses wherein said available variation of bit stream rates for each of said the plurality of encoders (see FIG. 3, Encoders 302-1 to 302-L; see col. 5, lines 46-65) is defined according to the relative quality of said content among said plurality of encoders, said relative quality being defined by said assigned priorities (see FIG. 4, steps 401-403; see FIG. 5, steps 504-512; assigning priorities/classes 7, lines 40 to col. 8, lines 67; see col. 14, lines 40 to col. 16, lines 15). Therefore, it would have been obvious to one having ordinary



skill in the art at the time the invention was made to define according to the relative quality of said contents, as taught by Rao, in the combined system of Kaye and Negishi, so that it would maximize the quality of the signals of all applications transmitted over the communication channel; see Rao col. 2, line 24-47.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaye in view of Negishi as applied to claim 1 above, and further in view of Zhang (US006795506B1).

**Regarding Claim 8**, the combined system of Kaye and Negishi discloses all aspect of the claimed limitations as described above in claim 1.

Neither Kaye nor Negishi explicitly disclose Internet. However, <sup>zhang</sup>~~Rao~~ discloses encoder (see FIG. 2, encoder 74) transmission over an Internet (see FIG. 2, IP medium, Internet network 78; see col. 8, lines 63 to col. 9, lines 11), and a multiplexer (see FIG. 2, network device 92) coupled via an Internet (see col. 9, lines 45 to col. 10, lines 40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Internet network, as taught by Zhang, in the combined system of Kaye and Negishi, so that it would improve the scheduling and multiplexing efficiency of compressed bitstreams and improved the transmission efficiency since Internet is one of the most common well known medium/network for transmission; see Zhang col. 4, line 18-54; see col. 9, lines 1-9.

***Allowable Subject Matter***

8. Claim 10 and 11 are allowed.

9. Claim 9 is objected to as being dependent upon a rejected base claim and objection set forth in paragraph 3, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

INM

7/13/05

  
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